THE POSITION OF THE AFRICAN *WISSADULA ROSTRATA* IN THE PREDOMINANTLY NEOTROPICAL GENUS *WISSADULA*

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Resumen. Fryxell, P. A. 2010. La posición de la especie africana *Wissadula rostrata* en el género predominantemente neotropical *Wissadula*. Bonplandia 19(1): 5-10. ISSN: 0524-0476.

La especie africana *Wissadula rostrata* (Schumach. & Thonn.) Pl. ex Hook. a veces se reconoce en rango específico y a veces en rango de variedad adentro de *W. amplissima* (L.) R.E. Fr. o de *W. hernandioides* (L'Hér.) Garcke, ambas especies americanas. Aquí se señala que *W. rostrata* tiene más afinidad con *W. parviflora* (A.St.-Hil.) R.E.Fr. de Sudamérica, y se concluye que merece reconocimiento en rango específico.

Palabras clave: Malvaceae, identidad, posición taxonómica.

Abstract. Fryxell, P. A. 2010. The position of the African *Wissadula rostrata* in the predominantly Neotropical genus *Wissadula*. Bonplandia 19(1): 5-10. ISSN: 0524-0476.

The African species *Wissadula rostrata* (Schumach. & Thonn.) Pl. ex Hook. has sometimes been recognized in specific rank and sometimes in varietal rank within either *W. amplissima* (L.) R.E. Fr. or *W. hernandioides* (L'Hér.) Garcke, both from the Americas. It is here noted that *W. rostrata* has greater affinity with the South American *W. parviflora* (A.St.-Hil.) R.E.Fr., and it is concluded that it merits recognition in specific rank.

Key-words: Malvaceae, identity, taxonomic position.

The genus *Wissadula* Medik. is predominantly Neotropical but has a few representatives in the Old World. The Old World representatives include two neotropical species (Borssum Waalkes, 1966) that are generally found sporadically in botanical gardens or as escapes from cultivation [*W. contracta* (Link) R.E. Fr. and *W. periplocifolia* (L.) Presl ex Thwaites] and one species [*W. rostrata* (Schumach. & Thonn.) Pl. ex Hook.] that is widely distributed in and indigenous to Africa and Madagascar. There has been little general agreement on how to interpret this African species. Some have treated it as a distinct species (e.g., Masters, 1868; Exell, 1961; Hauman, 1963; Merxmüller, 1964; Krapovickas, 1996). Others have treated it as a variety of *W. amplissima* (L.) R.E. Fr. (e.g., Fries, 1908; Exell & Mendonça, 1937; Andrews, 1952) or of *W. hernandioides* (L'Hér.) Garcke (Ulbrich & Fries, 1914). Still others have considered it synonymous with one or both of these two Neotropical species (e.g., Garcke, 1890; Baker, 1893; Standley & Steyermark, 1949; Hochreutiner, 1955; Fryxell, 1988). Moreover, Fries (1908) confounded the identity and distributions of the two American species *W. amplissima* and *W. hernandioides*, as a result of which they have been confused in much of the subsequent literature. This confusion was cleared up by a careful comparison of types by Krapovickas (1996), who incidentally recognized *W. rostrata* as distinct from other species.

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Baker (1893) presented a list of synonyms of *Wissadula rostrata*, many of which are unlike that species, but including *Abutilon parviflorum* A.St.-Hil. [= *Wissadula parviflora* (A.St.-Hil.) R.E. Fr.] from South America. Baker's suggestion has not been noted by other students of *Wissadula*, but it apparently indicates an alliance between *W. rostrata* and *W. parviflora*. As its name suggests, *W. rostrata* is notable and different from most other species of *Wissadula* in having a prominent rostrum or spine at the apex of each mericarp of the fruit (This spine becomes two spines per mericarp as a result of dehiscence of the mature mericarp). Similar spines are found in *W. parviflora* from South America, whereas the mericarps of *W. hernandioides* and *W. amplissima* are better described as apiculate (see Fig. 1). The key provided by Krapovickas (1996) to compare and distinguish among several species of *Wissadula*, did not include *W. parviflora* in the comparison. The purpose of the present study is to compare these species to discover how similar or dissimilar they are and to draw appropriate conclusions concerning their taxonomic relationships.

The two species principally under discussion here may be cited as follows. The information presented in Table 1 on these two species is based on the specimens cited in Appendix I.

Wissadula parviflora (A.St.-Hil.) R.E.Fr.

Fries, R. E., Kongl. Svenska Vetensk. Acad. Handl. 43 (4): 46. 1908.

Abutilon parviflorum A.St.-Hil., Fl. Bras. Merid. 1: 201. 1827.

Wissadula rostrata (Schumach. & Thonn.) Planch.

Planchon, J. E., in Hook., Niger Fl. 229. 1849.

Sida rostrata Schumach. & Thonn., Beskr. Guin. Pl. 306. 1827.

Wissadula amplissima (L.) R.E. Fries var. *rostrata* (Schumach. & Thonn.) R.E.Fr., Kongl. Svenska Vetensk. Acad. Handl. 43 (4): 51. 1908.

Wissadula hernandioides (L'Hér.) Garcke var. *rostrata* (Schumach. & Thonn.) R.E.Fr., Wiss. Erg. Schwed. Rhod.-Kongo Exped. 1: 143. 1914.

Discussion

It is evident from a comparison of the fruits of the four species in Fig. 1 that *Wissadula rostrata* has greater affinity with *W. parviflora* than with either *W. amplissima* or *W. her-*

Table 1. Comparison of four species of *Wissadula*.

Character	*W. hernandioides*	*W. amplissima*	*W. rostrata*	*W. parviflora*
Pubescence of stems	minutely stellate	long-pilose	minutely stellate	minutely stellate
Mericarp length (mm)	6-8	7-9	9-11	12-15
Spine length of frt. (mm)	0.5-1	1-1.5	1.5-2	3-4
Pubescence of distal end of petioles	stipitate-stellate hairs	long-pilose, hairs 1-2 mm	densely pubescent, hairs 0.5-1 mm	densely pubescent, hairs less than 0.5 mm
Calyx length (mm)	3-4	2-3	3-5	2-3
Midrib of calyx lobes	obscure	obscure	prominent	obscure
Distribution	United States, Mexico, West Indies, Central and South America	West Indies, Central and South America	Africa, Madagascar	Brazil, Argentina

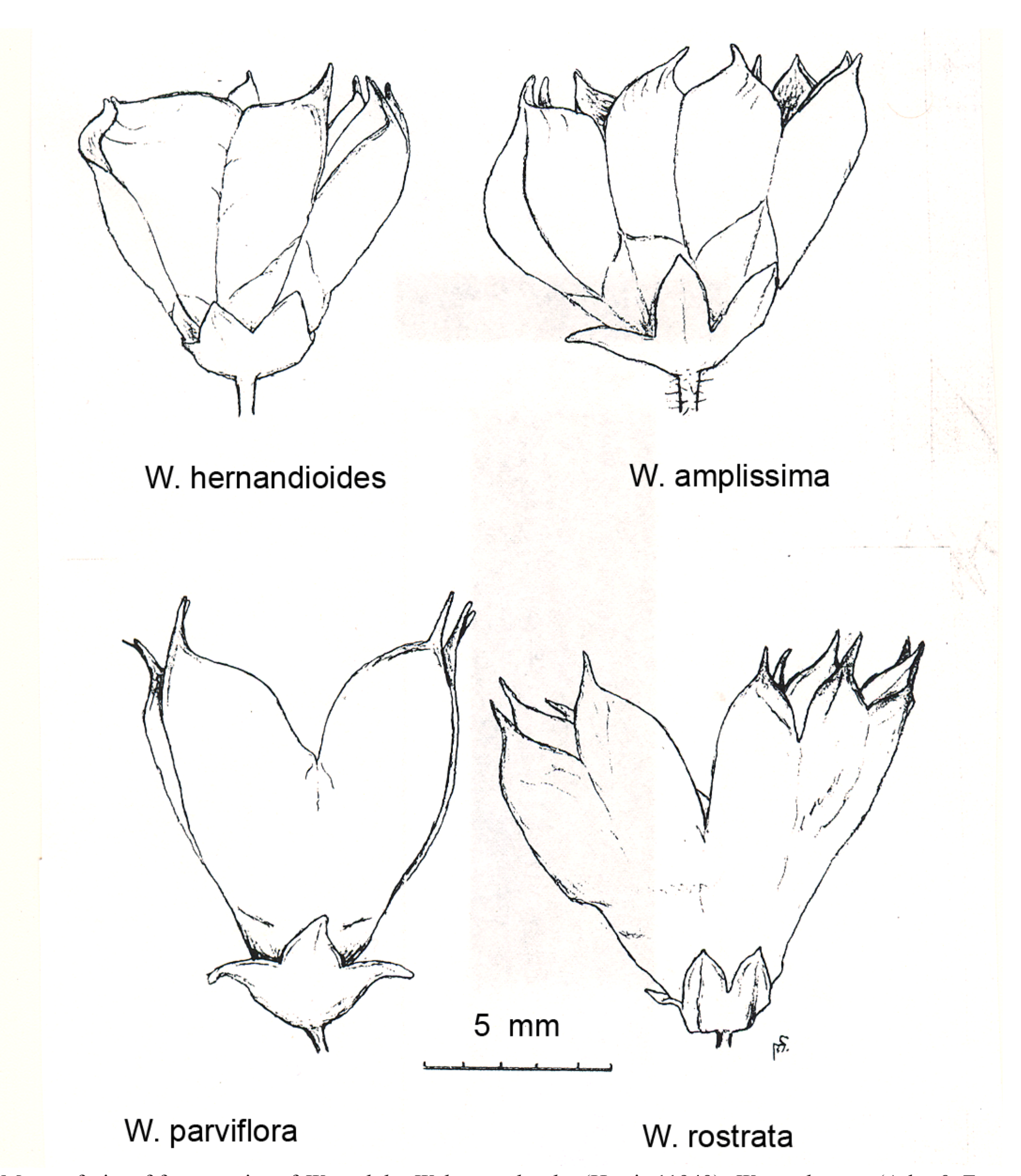


Fig. 1. Mature fruits of four species of *Wissadula. W. hernandioides* (Harris 11949), *W. amplissima* (Atha & Zanoni 795), *W. parviflora* (Hatschbach 24070), *W. rostrata* (Reekmans 10553).

nandioides. To reduce *W. rostrata* to varietal rank under either of the latter two species is therefore misleading concerning its affinities within the genus. That leaves two alternatives as to its position:

(1) *Wissadula rostrata* and *W. parviflora* could be recognized as distinct species, or,

(2) *W. parviflora* could be reduced to infraspecific rank within *W. rostrata*.

Since both names have basionyms dating from 1827, neither has priority, but since Baker reduced *Abutilon parviflorum* to synonymy within *W. rostrata* (Baker, 1893), his choice favors priority for *W. rostrata* and must be followed according to the International Code of Botanical Nomenclature.

No one has ever suggested reducing *W. parviflora* to infraspecific rank within *W. rostrata*, so far as I am aware, and I do not suggest it now. Rather, I believe the two species are sufficiently distinct to recognize in specific rank. They differ in various morphological characters, as seen in Table 1. The amount of this difference is consonant with the differences

generally recognized in specific rank among other species of *Wissadula*. The two species are completely allopatric (occurring on different continents), with *W. rostrata* found widely in Africa and in Madagascar, and *W. parviflora* found exclusively in South America, in Brazil (Minas Gerais, Paraná, Rio Grande do Sul, São Paulo) and Argentina (Misiones).

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APPENDIX I

Specimens examined of *Wissadula parviflora* (A.St.-Hil.) R.E.Fr.:

ARGENTINA. **Misiones**: Posadas Bonpland, 6 Jan 1908, *E.L. Ekman 159* (MO, NY, S); Dep. Eldorado, *T.M. Pedersen 15790* (CTES, S), *S. Tressens & al. 4914* (CTES); Dept. Iguazú, 25°41'S, 54°12'W, 120 m, 22 Apr 1997, *O. Morrone & al. 2015* (MO, SI).

BRAZIL. **Minas Gerais**: Caldas 1845, *J. F. Widgren 521* (S-4), Caldas, 1845, *J. F. Widgren 522* (S-2), Caldas, 1845, *J. F. Widgren 524* (S), Caldas, May 1854, *C. A. Lindberg 296a* (S), Caldas, [various dates], *A.F. Regnell I-22* (S-4), Caldas, 20 Oct 1873, *H. Mosén 411* (S), Caldas, Pedra Branca, 24 Jan 1980, *A. Krapovickas* & *C. L. Cristóbal 35471* (CTES, NY). **Paraná**: Porto Vitória, 8 Jan 1985, *A. Krapovickas* & *C.L. Cristóbal 39593* (CTES, NY); Castro. Rio Pitangui, 12 Apr 1966, *G. Hatschbach 14217* (CTES, NY); Capão Grande, 1 Mar 1904, *P. Dusén 3955* (S-2); Capão Bonito, 15 May 1914, *P. Dusén 15041* (S); Ponta Grossa, 6 Mar 1910, *P. Dusén 9507* (S); Jaguarahyva, 15 May 1914, *G. Jönsson 355a* (S); Mun. Rio Branco do Sul, Quebrada Funda, 31 Mar 1970, *G. Hatschbach 24070* (NY, S); Parque Iguazú, *Oliveira 248* (CTES, NY). **Rio Grande do Sul**: Palmeira, 12 Feb 1951, *B. Rambo 49994* (S). **São Paulo**: inter Rio Jaguaty et Laguna de Caracol, 25 Mar 1874, *H. Mosén 1120* (S). Mun. de Campinas, Faz. Santa Genebra, 9 Sep 1982, *M. Sazima 14186* (NY).

Specimens examined of *Wissadula rostrata* (Schum. & Thonn.) Pl. in Hook.:

ANGOLA. **Distr. N. Riquimba**: Mashi River, 3400 ft, 12 Aug 1952, *L.E. Codd 7541* (K).

BURKINA FASO. Reg. Boulgou, SE of Tenkodogo, 11°44'N, 0°19'W, 300 m, 28 Sep 1996, *J.E. Madsen 5879* (NY, MO, S).

BURUNDI. **Ruyigi**: Kabanga (Mosso), 3°40'S, 30°25'E, 1150 m, 6 Jun 1981, *M. Reekmans 10553* (MO, S). **Bubanza**: Plaine Rusizi, 3°10'S, 29°18'W, 850 m, 12 May 1982, *M. Reekmans 11169* (MO, S).

CAMEROON. Yaunde Station, 800 m, 1890-1894, *Zenker & Staudt 551* (S-2); Soulédé, 800 m, 18 Oct 1955, *A. Saxer 532* (G, K).

CENTRALl AFRICAN REPUBLIC. Bamingui-Bangoran, 8°30'N, 21°20'E, 640 m, 15 Oct 1989, *D.J. Harris & al. 2066* (MO).

CONGO. Prov. Leopoldville, Terr. Seko-Banza, Kimwanda, 13 Apr 1960, *P. Compère 1965* (S).

ETHIOPIA. **Gamu-Gofa Region**: Arba Minch, 6°3'N, 37°37'E, 1250 m, 30 Aug 1975, *M.G. Gilbert & al. 290* (MO); Arba-Minch, 1000—1500 ft, 14 Apr 1972, *J.W. Ash 1614* (MO).

FRENCH GUINEA. Nzerekere, 11 Oct 1957, *J.T. Baldwin, Jr. 9738* (MO).

GABON. Ca. 25 km S of Doussala, 2°30'S, 10°37'E, 17 Apr 1987, *J.M. Rietsma & al. 3308* (MO, NY, RSA).

GHANA. Anumele village, Achimnolta, 12 Mar 1954, *S.K. Bada 25403* (K).

GOLD COAST. 4 mi from Gonokrom, 24 Dec 1954, *C.D. Adams 2992* (K); Cadbury Hall, Kuman, 18 Nov 1950, *K.O. Darko 637* (MO).

IVORY COAST. Beuna Natl. Park, 50 km S of Ounge –Fitini, 28 Jan 1964, *R.A.A. Oldeman 890* (K).

KENYA. Distr. West Pokot: Kainak, 1°46'N, 35°29'E, 832 m, 12 Sep 2005, *J.M. Mussya & al. 52005023* (K).

MALAWI. **No. Humphi Distr.**: Lura escarpment, 29 mi S of Chillumba, 700 m, 27 Apr 1975, *J. Pawek 9602* (K, MO, UC).

MOZAMBIQUE. Mossurise Distr., Manica & Sofala Prov., 1700 ft., 16 Aug 1961, *N.C. Chase 7517* (NY, S); Murrupa, Luwire, 12°13.93'S, 38°0.64'E, 300 m, 16 Jun 2003, *J.S. Golding & al. 107* (K).

NIGERIA. **Benin**: Distr. Iyekasela Ughoten village, 20 Jan 1961, *B.O. Daramola& J.A. Emwieybon 32780* (K).

NORTHERN NIGERIA. Kontagora, 1 Dec 1905, *J.N. Dalziel 123* (K). Matgoro, Oct 1930, *A.S. Thornwill 122* (K).

NORTHERN RHODESIA. Broken Hill, 16 Aug 1964, *J.M. Mutimushi 923* (K); **Maala**: 20 Mi E of Namwala, 3300 ft, 24 Apr 1954 *E.A. Robinson 733* (K).

NUBIA. Ad pagum Cordofanum, 4 Dec 1839, *Kotschy 286* (S).

SENEGAL. **Sine Saloum**: Delta de Saloum Natl. Park, 13°40' _, 16°30'W, 40 m, 10-21 Oct 1991, *A. M. Lykke & al. 700* (NY). **Tambacounda**, Parc National du Niokoba, 13°4'N, 12°43'W, 80 m, 21 Oct 1993, *J.E. Madsen & S. Taore 2617* (AAU, MO).

SIERRA LEONE. Port Jokal, 1 Dec 1914, *N.W. Thomas 5852* (K).

SOUTHERN RHODESIA. **Karibe Distr.**: Karibe, 2500 ft, May 1960, *B. Goldsmnith 120/60* (MO). **Nuanetsu Distr.**: near Malipata, 2 May 1961, *R.B. Drummond& R. Rutherford-Smith 7681* (K).

SUDAN. **Darfur**: between Gukda and Nyuringya, 1550'1600 m, 3 Jan 1934, *J.E. Dandy 69* (BM, MO).

TANZANIA. **Mwanza**: coiast of Lake Victoria, 4000 ft, 30 May 1937, *B.D. Burtt 6544* (K). **Kigoma**: Kakombe, 8 Jul 1959, *J. Newbould & R.M. Harley 4238* (K, MO). **Lindi**: Kilwa Distr. 7 km NE of Litwi Village, ca. 2.5 km E of Mpamanda Ridge, 9°4'18"S, 39°9'45"E, 100 m, 16 Nov 2005, *C.J. Kayombo & al. 5240* (MO, TEX); Bezirk Lindi, 460 m, 20 May1934, *H.J. Schlieben 5494* (S); Bezirk Mahenge, Sali, 900 m, 7 Jun 1932, *H.J. Schlieben 2266* (S); Rukwa, Mpanda Distr., 6°55'33"S, 31°13'32"E, 910 m, 24 Apr 2002, *N.A. Mwangulango 807* (S). **Morogoro**: Milawilila Forest Reserve, 6°59'S, 37°45'E, 250 m, 21 Aug 2000, *B. Mhoro 383* (K, MO).

TOGO. **Dapaong**: 30 km N Dapaong, 8 Sep 1976, *H. Ern & al. 324* (B, K); Östlich Atakpamé nach Atchinedji, 20 Sep 1973, *P. Hiepko& W. Schultze 314* (B, MO). **Regione Maritime**: Lomé-Cacaveli, 4 Oct 1977, *H. Ern & al. 1074* (B, K).

TRANSVAAL. Zoutpangsberg, Kruger Natl. Park, 4 mi NW of Punda Maria, 1600 ft, 15 Aug 1949, *L.E. Codd 5343* (K).

UGANDA. Q. Elizabeth Park, Ntungwe River, 2995 ft, 11 May 1961, *Y.E. Symes 683* (K); Kibanda Masindi, 1°40'N, 32°5'E, 1050 m, 15 Oct 2002, *P.K. Rwaburindore 5359* (MO).

UPPER VOLTA. W of Banfora, 10°40'N, 5°0'W, 4 Oct 1967, *C. Geerling & J. Bokdam 1154* (MO, WAG).

ZAMBIA. Mpika Distr.: Luangwa Game Reserve, 1 May 1965, *B.L. Mitchell 2762* (K); Copperbelt, Ndola Rural Distr., 13°29'50"S, 27°55'27"E, 1230 m, 1 May 1994, *D.K. Harder & H.H. Schmidt 3014* (MO).